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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,612	03/18/2004	Yasuhiro Sugaya	10873.1407US01	9546
23552	7590	03/31/2005	EXAMINER	
MERCHANT & GOULD PC			LAM, CATHY FONG FONG	
P.O. BOX 2903			ART UNIT	PAPER NUMBER
MINNEAPOLIS, MN 55402-0903			1775	

DATE MAILED: 03/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/804,612	SUGAYA ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cathy Lam	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.  
     4a) Of the above claim(s) 10-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>03-18-2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-9, drawn to a transfer sheet, classified in class 428, subclass 344.
  - II. Claims 10-16, drawn to a circuit board, classified in class 428, subclass 209.
  - III. Claims 17-22, drawn to a method of manufacturing a wiring board, classified in class 156, subclass 230.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a different process such as by making via holes in an insulating substrate, filling the via holes with conductive paste, while the substrate is in b-stage condition, placing a mask over the surface of the substrate, slurry coating a conductive material over the mask. Applying heat and pressure to the conductive coating and the mask, then removing the mask. The process as claimed can be used to make a different product such as a decalcomania.
3. Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2)

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that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because a releasable transfer sheet is not required. The subcombination has separate utility such as a hologram sticker.

4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Atty: Douglas Mueller on March 25, 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al (US 4639285) in view of Nishimoto et al (US 6451441).

Suzuki discloses a flexible metal foil laminate comprised of an insulating base film, a metal foil and an adhesive. The laminate is particularly used for printed circuit boards.

The insulating base film is a flexible plastic film which can be polyethylene terephthalate films ((col 1 L 34-36). The metal foil which can be a copper foil, is adhesively bonded to the insulating base film through a silicone based adhesive (col 2 L 51-52 & col 1 L 68-col 2 L 3). The insulating base film is subjected to a pretreatment (i.e. priming) prior to the coating of the adhesive (col 2 L 5-10).

Suzuki teaches the structure and the materials of the present invention. Inherently, the  $T_g$  of the insulating base film meets the claimed  $T_g$  (i.e. not lower than 60 °C).

Suzuki however is silent about the metal foil (or wiring pattern) has roughened surfaces, nor does it mention the metal foil is provided with a silane coupling agent and/or plated with zinc.

Nishimoto teaches a metal foil laminate comprised of a resin film (3), a metal foil (2) and an adhesive (4). The laminate is used for printed wiring boards. The metal foil is formed into a circuit or wiring pattern (col 4 L 67).

The metal foil which can be copper, is adhesively bonded to the resin film (3) via an adhesive (col 4 L 55-57 & col 5 L 5-7). The resin film can be a polyethylene terephthalate (col 4 L 60). The metal foil has a thickness from 5-50  $\mu\text{m}$  and a coupling

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agent is optionally applied to the surface of the metal foil (col 5 L 33-36). The metal foil facing the resin film (3) may be coarsened to have a surface roughness of from 0.2  $\mu\text{m}$  to 0.7  $\mu\text{m}$  (col 5 L 26-33). The surface of the metal foil on the opposite side may also be coarsened to enhance adhesion between an insulating sheet and the circuit/wiring layer (col 5 L 38-42).

In view of the prior art teachings, it would have been obvious to fabricate a metal foil laminate which has a silicone based adhesive for bonding the metal foil to the resin base layer and the metal foil has roughened surfaces because silicone base adhesive is a conventional adhesive material long been used in metal foil resin layer laminate and roughened surfaces are also well known for enhancing bonding.

Furthermore, one skill in the art would choose a surface roughness and any surface plating or coating for the metal foil because these are just a matter of design scheme.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl  
March 25, 2005.